

Abstract

The present invention is a circuit that uses only one pair of bi-directional terminals for both charging and discharging a rechargeable battery. When the circuit detects that the battery is in the charging process, it opens an unrestricted current passage and lets the rechargeable battery fully charge. When the circuit detects the battery is in discharging process, if needed, it will induce a voltage drop of 0.7v and reduce the Li-Ion rechargeable battery's output voltage from 4.2v to desired voltage range 3.3~3.6v. In addition, the circuit provides a feature that prevents the battery from over-charging or over-discharging.